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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,226

12/07/2004

Philippe Busson

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EXAMINER

LISTVOYB, GREGORY

ART UNIT

PAPER NUMBER

1711

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/517,226

Applicant(s)

BUSSON ET AL.

Examiner

Gregory Listvoyb

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/7/2004.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

Claims 1-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al (US patent 5288763) Li in combination with Matyjaszewski et al (US patent 5763548) herein Matyjaszewski.

In reference to claims 1, 2, 6, 7, 12, 14, 15, Li discloses a method of producing a cross-linked polymeric support having a multimodal pore structure (Abstract) comprising the steps of:

providing a degradable template macromolecule;
providing an organic phase, which comprises 5-50% wt of template macromolecule (column 5, line 5), one or more radically polymerisable multifunctional monomers (i.e. vinyl phenol, column 3, line 20) in a solvent, and an aqueous phase, to produce a cross-linked (crosslinked with Divinylbenzene Column 4, line 20) polymeric support having a primary pore structure and comprising a template molecule. Then the support obtained subjects to degrading conditions to at least partially remove the template molecule from within the support to produce a cross-linked polymeric support having a secondary pore structure in addition to the primary pore structure.

Li does not positively teach that template macromolecule can initiate a polymerization. However, he teaches that the reaction can start even without any

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initiator (i.e. benzoyl peroxide, column 4, line 65). Therefore, at the absence of well-known initiator the template macromolecule itself initiates a polymerization.

In reference to claim 3, template molecule links with core polymer with reaction between ester or amide with acid halide (column 3, line 65).

Regarding claims 10-11 and 13-14 the template removal takes place by alkaline hydrolysis (column 5, line 45), where only ester or amide covalent bond between template and core polymer is cleaved. Therefore, the secondary pore size controlled by the molecular weight of the template.

Regarding Claims 16, 18 and 19 the final support, which has spherical particle size within the range of 3-1000 μm with macropore size of 3.5-10000 nm and microspore diameters of 0.1-3.5 nm (column 4, line 40) can be used in chromatographic separations (Abstract). Thus it inherently has specific surface area in the range of 150-300 m^2/g , which are typical values for chromatographic media.

In reference to claim 17, Lee does not teach that the polymeric support is a monolith. Monolith can be formed when all the reaction steps occur inside the column. Since Li's reaction conditions do not require high pressure and temperature, there are no technical obstacles to make Li's support inside chromatographic columns. Monolith support has extremely low backpressure, which is a very attractive feature for

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chromatographic separations. Therefore, it would be obvious to a person with ordinary skills in the art to prepare a monolith support using Li's process.

Li does not teach a catalyst comprising transition metal and a ligand.

Regarding claims 2, 4, 5, 8 and 9 Matyjaszewski discloses a new polymerization process, initiated by transition method (i.e. Cu, Abstract) with coordinated carbon atom (Fig. 15), which is suitable for synthesis dendritic polymers (Abstract).

Matyjaszewski's polymers have very narrow MWD =1.15.

Therefore, it would be obvious to a person with ordinary skills in the art to use Matyjaszewski's initiator in Li's process in order to obtain narrow MWD and, therefore, uniform pores in the final chromatographic support.

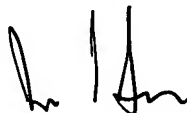
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory Listvoyb whose telephone number is (571) 272-6105. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Listvoyb
Examiner
Art Unit 1711



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700
